

GLM:seh 6/20/06 534432.doc E-272-1999/O-US-03
PATENT

Attorney Reference Number 4239-62295-01
Application Number 10/088,269

REMARKS

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Claims 1-5, 9-40 and 64-68 are pending in the application. Claims 15-40 have been withdrawn from consideration. No claims have been allowed. Claims 1, 64 and 68 are independent.

Procedural Posture

A final Action was mailed September 26, 2005. Applicants responded with amendments on January 26, 2006. The amendments were entered, but the Advisory Action of February 28, 2006, maintained the rejection of claims 1-5, 9-14, and 64-68 under § 103. Applicants filed a Request for Continued Examination and now present additional amendments.

Applicants reiterate the position presented in the response of January 26, 2006, but now present additional amendments to expedite issuance of a patent covering the technology.

Cited Art

U.S. Pat. No. 5,817,462 to Garini et al. ("Garini").

U.S. Pat. No. 5,784,162 to Cabib et al. ("Cabib").

Interview Summary

Applicants wish to thank the Examiner for his time during a telephonic interview on Monday, June 19, 2006. Applicants' attorney discussed claim 1 and Garini. No agreement was reached regarding the claims.

Patentability of Claims 1-5, 9-14, and 64-68 over Garini and Cabib under § 103

The Advisory Action rejects claims 1-5, 9-14, and 64-68 under 35 U.S.C. § 103(a) as unpatentable over Garini in light of Cabib. Applicants respectfully submit the claims in their present form are allowable over the cited art. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of

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success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP § 2142.)

Motivations to combine or modify references must come from the references themselves or be within the body of knowledge in the art. (See MPEP § 2143.01.)

Claim 1

As amended, claim 1 is directed to a method for counting nucleic acid probe signals. Applicants have further amended the claim to point out "two-dimensional image slices . . . taken at different depths along a z-axis" Claim 1 recites in part:

obtaining, by use of a confocal microscope, a plurality of successive two-dimensional image slices of the region of interest taken at different depths along a z-axis via the confocal microscope, wherein the successive two-dimensional image slices represent respective optical sections of the region of interest at different depths of the biological specimen; . . .

For example, the Application at page 24, lines 24 et seq. describes:

Typically, the algorithm is provided with a set of digital image slices (e.g., a raster image) representing a set of observations (e.g., of a biological specimen subjected to FISH) taken at different depths along a z-axis via a confocal microscope.

Garini's description of a spectral image does not teach or suggest "two-dimensional image slices . . . taken at different depths along a z-axis." The Advisory Action states that Cabib and Garini "describe obtaining spectral 3D data structure consisting [of] 2 spatial dimensions and one spectral dimension." Garini describes at column 17, line 4 et seq.:

Unlike other types of 3D data such as tomographic data, $D(x,y,z)$, obtained for example by a confocal microscope, where each point represents, in general, the intensity at a different location (x,y,z) in a [three]-dimensional space, a spectral image is a sequence of images representing the intensity of the same two-dimensional plane (i.e., the sample) at different wavelengths.

Thus, Garini does describe "3D data" and a "sequence of images . . . of the same two-dimensional plane." However, the claimed "two-dimensional image slices . . . taken at different depths along a z-axis" sufficiently distinguishes over Garini.

Garini's description of tomographic data does not anticipate the recited "distinguishing spatially overlapping nucleic acid probe signals" as recited by claim 1. Claim 1 further recites:

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with the plurality of successive two-dimensional image slices of the region of interest, distinguishing spatially overlapping nucleic acid probe signals in the biological specimen;

Although the passage of Garini quoted above does mention tomographic data, $D(x,y,z)$, one of skill in the art could not be expected to surmise the recited "distinguishing spatially overlapping nucleic acid probe signals" from the mere mention of such tomographic data.

Cabib similarly does not show the recited features, and neither reference contains sufficient motivation to combine with or modify the other reference to result in the claimed arrangement. Accordingly, claim 1 and its dependent claims are now allowable over a Cabib-Garini combination.

Claims 64 and 68

Claims 64 and 68 recite language similar to claim 1 and are allowable for at least the same reasons.

Election/Restrictions

Claims 15-40 were earlier found to be drawn to a nonelected species and, therefore, were withdrawn from further consideration. Applicants believe, as is discussed above, that claim 1 is allowable in its present form.

Because generic claim 1 is now allowable, and claims 15-40 depend from claim 1, claims 15-40 and are also allowable. Therefore, Applicants respectfully request that the Examiner withdraw the species and subspecies election requirements on claims 15-40, and continue to consider those claims for allowance.

Request for Interview

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

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Conclusion

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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